

Commentary...

Aquifer Protection

By AD HOC North Hill Expansion Committee

In order to better understand aquifer protection, one needs to be familiar with the definition of an "aquifer." Horsley & Whitten Inc., Environmental Services, defines "aquifer" as follows: "Ground water is water which saturates pore spaces between gravel, sand, silt or clay particles, or in bedrock fractures, in the subsurface environment. The geologic formations which hold ground water, and from which significant quantities of ground water can be extracted, are called "aquifers." Ground water is derived primarily from precipitation which percolates downward and recharges the "aquifer." Depending upon local conditions, approximately 1/4 to 1/2 of the precipitation results in ground water recharge. The remainder is lost to evaporation and transpiration by plants or to surface runoff."

Applying this to the Town of Duxbury, the primary recharge area or Type II Zone of Contribution, extends from Lake Shore Drive, in the west, to Partridge Rd., in the east, and from the area of Temple and Franklin streets, in the north to Mayflower St., in the south. This area comprises approximately 10 square miles or a little over one-third of our town. The North Hill expansion will cover 95± acres which interpolates to 1.5% of the defined "aquifer."

Chemicals and pesticides that are applied to any golf course must be done by a licensed agronomist. The agronomist must submit to the Commonwealth an annual report which includes a log of what chemicals and pesticides have been applied, when and in what concentrations. These products have to be sanctioned by

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the Environmental Protection Agency.

The North Hill Expansion Committee undertook a comprehensive review of Bayberry Hills Golf Course in Yarmouth. The course lies within the Aquifer Protection Overlay District of Yarmouth, and it abuts and lies upgradient of town well fields. The course was built in 1990. To ensure that the ground water resources under the golf course continued to meet drinking water standards, now and in the future, they implemented a "Ground Water Management Program" which regulates the use of all chemicals and pesticides on the course. Approval of this program was signed by all town boards, including Water Quality, Board of Health, Board of Selectmen, Water Department Superintendent, Town Administrator, Director of DPW, Superintendent of Golf Courses, and the Chairman of the Golf Commission. The ground water has been continually monitored over the past 5 years by monitoring wells. This past December they voted to reduce quarterly testing of these wells to once a year due to the absence of any significant contaminants. The Committee could not uncover any instance where a golf course has contaminated a public water supply.

The key to a successful program of protection of the aquifer is control. The Town owns the golf course and it is the Town that will deem what is to be used on the course. In our proposal one of the tasks to be undertaken by Horsley & Whitten is the preparation of a Ground Water Monitoring Program as well as an Integrated Pest Management Program. These are our safeguards.

The nearest Town wells to the golf course are the Tremont St. wells, which are surrounded by single family residences. The Town has no control over application of chemicals or pesticides on private property. How many homes are located on the remaining 6,305 acres covering the "aquifer?"

